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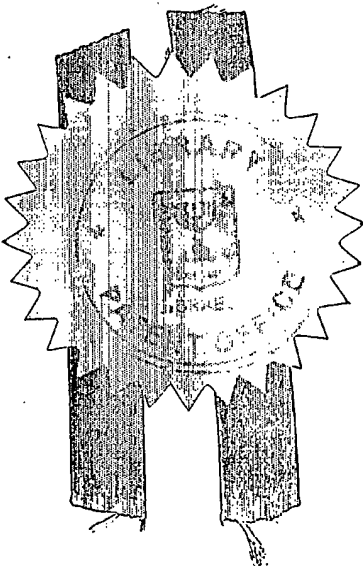
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Application For Patent

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נעל הניתנת להתאמה אישית

Personally adjustable footwear

(בעברית)  
(Hebrew)  
(באנגלית)  
(English)

Hereby apply for a patent to be granted to me in respect thereof.

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נעל הניתנת להתאמה אישית

Personally adjustable footwear

Tvoua Ofer  
Tvoua Amir

תבואה עופר  
תבואה אמיר

C. 154969

## PERSONALLY ADJUSTABLE FOOTWEAR

### FIELD OF THE INVENTION

This invention relates to footwear, particularly footwear whose size is adjustable.

The term "*footwear*" when used herein, is to be taken in its broadest sense and denotes shoes, sneakers, sandals, clogs, boots, skates, sportswear for the foot, etc.; and any of these terms may be substituted herein for the term "*footwear*".

### BACKGROUND OF THE INVENTION

There is known in the art shoes whose longitudinal dimension is adjustable by a variety of ways.

10 US 524,946 (Kregel) discloses a shoe intended for fitting to a deceased person for viewing and interment. Adjustability is achieved using an elastic band extending between a heel portion and toe portion designed to draw the heel portion forward to snugly fit to the foot of the deceased.

US 641,642 (Gunn) discloses a shoe, being adjustable length-wise and  
15 width-wise, the sole of which comprises a frame part at the shoe's heel and a shank at the middle/front of the sole. The frame part and shank are slidable with respect to one another to the extent of a slot in the shank. Upon adjusting to a desired length, the length of the sole is fixed by tightening a screw. The shoe comprises an upper, or top portion, designed to accommodate inserts on the right  
20 and left sides thereof, which can be folded to allow adjustment of the top portion of the shoe. The insert is secured by a lacing cord which passes between two vertical rows of eyelets. A similar arrangement is used to adjust the width of the shoe, with laterally arranged slots.

US 2,009,684 (Affronte) describes a shoe, having a similar length adjusting means wherein the shank has a tongue being slidable within a receiving portion of the heel section of the sole. The tongue has a plurality of holes for allowing a screw to pass and fix the tongue to the heel section at a hole  
5 corresponding to the desired shoe length.

US 2,497,175 (Mantos) provides a shoe formed of two main sections designed to be joined together by workmen in the shop of a shoe dealer whereby the size of the shoe can be adjusted to a given size prior to completing assembly of the shoe. A metal shank projecting from the toe section of the sole comprises  
10 an integral fork aligned with a metal sheath or plate mounted in the heel portion of the sole. The fork has tines with triangularly shaped lugs along their edges corresponding to receiving members on the sheath to allow the toe and heel sections of the shoe to be securely attached to produce a shoe having any number of discrete lengths.

15 US 3,389,481 (England) shows an expandable shoe having a mid-section of bellows-like material permitting longitudinal expansion and contraction along a sliding guide having a locking mechanism to secure the fit at a desired length. The locking mechanism comprises a metal shank having two sliding plates, one of which has a transverse slot for receiving a detent formed in the other plate. A  
20 screw assembly extending up through the heel is removed to allow the plates to slidable over one another, and then it is reinserted to retain the shoe in the newly extended position.

US 3,997,985 (Shina) discloses a stretchable shoe, particularly suitable for a growing child, comprising a front member and a rear member which may be  
25 adjusted in length. The front member and the rear member are separable and inter-connected by a screw which passes through one hole of the front member and one of a plurality of holes of the rear member. The front member is composed of an upper, an insole, a middle plate and a bottom plate, and the rear member is composed of a sole, an upper and a heel.

US 5,659,980 (Lin) discloses an adjustable shoe which has a heel, a toecap and an insole. The front portion of an instep has a plurality of positioning protrusions. First and second fastening pads are disposed on two outer sides of the heel. First and second ball buttons are disposed on the rear surface of the heel. An adjustable pad with positioning holes therein is disposed on the toecap from which two flaps extend. The inner surface of the flap has a fastening element. The first and second positioning plates are extended from the back of the outsole. The first positioning plate holds the first socket button and the second positioning plate holds the second socket button.

10 US 6,138,385 (Jungkind) describes a shoe sole having a jointed middle section located between toe and heel portions of the sole. The middle section is made of an elastically flexible of springy material configured as a wavy or folded web with crests and troughs. A spindle runs from the heel to the toe portions and has a head located inboard of the rear edge of the heel portion. The spindle is  
15 rotatable/screwable into a nut whereby the shoe can be adjusted in length.

It is an object of the present invention to provide footwear whose size can be adjusted by the wearer. It is a further object of the invention to provide such adjustable footwear which is personalizable and easily and quickly re-adjustable.

## SUMMARY OF THE INVENTION

20 The present invention relates to footwear whose size can be conveniently and easily adjusted without any need for tools.

Such footwear typically comprises a toe portion (hereinafter "*toe*"), a heel portion (hereinafter "*heel*"), composing a sole and may also include a top portion or so-called upper.

25 According to one embodiment of the invention, the footwear comprises a series of sole segments (laterally oriented, longitudinally oriented, or a combination thereof) disposed between the toe and the heel. These segments can be added or removed to adjust the size of the footwear; or, they may be spaced further apart or closer together to adjust the footwear size.

Each of the segments comprises an arrangement allowing them to be fixed between the toe and heel. One option for such an arrangement is by having at least one, and typically two or more, parallel bores which are oriented to run longitudinally to the footwear while extending from the toe toward and into the heel, or vice versa, there are one or more segment holding members (e.g. rod-like members, cables, tongue-like member(s), etc.) adapted to be aligned with the bores of the segments and with corresponding bores in the heel (or toe, if vice versa). The segment holding members may be fairly rigid, however with appropriate resiliency/flexibility to allow for suitable movement when the footwear is being worn; however, they may be stretchable, for example, rubber band-like members. Depending upon the option, the heel or toe may comprise a locking mechanism, which would be appropriate, for example, to an embodiment comprising rod-like members extending between the toe and heel.

Segments adapted for this option are typically in the shape of a bar with a square profile, however, they may be of any of a variety of shapes, styles, colors, shapes, etc., and include aesthetic ornamental or artistic features so that the wearer can modify the style of the footwear to his or her taste – as may segments usable in other options, described below.

Another option for fixing segments between the toe and heel is by their being adapted to inter-engage or inter-connect with each other and to engage with the toe and heel. Inter-engaging may be by a variety of arrangements, including “Lego<sup>TM</sup>-type” connections, snap-fitting, screw-fitting, twist-fitting, hooking, hook and loop fasteners (Velcro<sup>TM</sup>), etc.

According to another embodiment of the invention, the footwear comprises toe and heel portions connected therebetween by a bellows-like structure, constituting a middle section, being compressible and/or expandable at least in the direction longitudinal to the footwear.

Projecting from the toe is a tongue that extends into a corresponding tongue receptacle in the heel, or vice versa. The tongue comprises a plurality of linearly arranged holes passing therethrough and alignable with corresponding



holes in the tongue receptacle. The heel comprises a top portion which can be bent upward and having a plurality of downward projections or pegs adapted to pass through the holes of the tongue and into the bores/depressions of the tongue receptacle. The size of the footwear can be adjusted by lifting the top portion and  
5 sliding the toe and the heel toward each other, or apart, until a size, corresponding to an alignment of the holes of the tongue and tongue receptacle is achieved. The top portion is then lowered to fix the length.

Optionally, the footwear can include an arrangement for facilitating alignment of the pegs and corresponding bores. Further, the tongue may  
10 comprise an indicator to point to indicia adjacent the tongue receptacle which indicates the size of the shoe at a given adjustment portion.

According to an additional embodiment of the present invention, the footwear's toe and heel each comprise members (e.g. finger-like members, typically in a male/female connection) which extend toward and engage with  
15 each other. The members are slidable with respect to each another to allow for different footwear length, and typically have profiles shaped in such a way as to prevent vertical displacement.

At a desired length, a tongue with at least one extending peg/projection can be inserted into a tongue receptacle at the heel.

20 Thus, the present invention provides footwear whose size can be conveniently and easily adjusted without any need for tools, possibly by a wearer thereof. The footwear according to embodiments of the invention is readjustable, thus it can be adjusted to a variety of lengths at any time.

## BRIEF DESCRIPTION OF THE DRAWINGS

25 In order to understand the invention and to see how it may be carried out in practice, embodiments will now be described, by way of non-limiting examples only, with reference to the accompanying drawings, in which:

Fig. 1 is a perspective view of an embodiment of adjustable footwear according to the present invention;

**Fig. 2** is an exploded view of the embodiment shown in Fig. 1;

**Fig. 3A** is a longitudinal sectional view along line III-III in Fig. 1;

**Fig. 3B** is a sectional side view of a modification of the embodiment of Figs. 1-3;

5       **Fig. 4** is a longitudinal sectional view showing another modification to the embodiment shown in Fig. 1;

**Fig. 5A** is a perspective view of a segment usable in any of the embodiments of Figs. 1-4;

**Figs. 5B-5J** are perspective views of segments for use in further  
10       embodiments of adjustable footwear of the present invention;

**Fig. 6** is a perspective view of another embodiment of the present invention;

**Fig. 7** is a longitudinal sectional view of the embodiment shown in Fig. 6;

**Fig. 8** is a top perspective view of a further embodiment of the present  
15       invention;

**Fig. 9A** is a sectional view taken through plane IX-IX of Fig. 8;

**Fig. 9B** is a sectional view analogous to that of Fig. 9A illustrating an exemplary modification of the embodiment shown in Fig. 8;

**Fig. 10** is a bottom perspective view of the embodiment shown in Fig. 8;

20       **Fig. 11** is a bottom view of a modification of the embodiment of Fig. 1;  
and

**Fig. 12A-12C** are side views of exemplary segments for use in the embodiment of Fig. 11;

## **DETAILED DESCRIPTION OF THE INVENTION**

25       Referring to Figs. 1-5, a first embodiment, including particular modifications, of an article of footwear, generally designated as 10, of the present invention, is illustrated. The footwear 10 comprises a toe portion 12 (hereinafter "toe") and a heel portion 14 (hereinafter "heel") and a plurality of segments 16 disposed therebetween. Extending from the toe 12 toward the heel 14 is at least

one (and typically more than one) segment holding member in the form of a rod-like member -- for example, four rods 18 as illustrated in Fig. 2.

The segments 16 typically have a geometry wherein they have a length and a width, the length being longer than the width -- in other words an aspect ratio greater than one. The segments 16 may comprise an indication of their size, in particular the dimension affecting the length of the footwear 10. Such an indication may be a numeral thereon indicating its dimension, or a color, shape, decoration, etc., corresponding to a dimension. However, the segments 16 may be of various shapes, colors, etc., merely for decorative purposes. The segments 10 16 may also be made of different materials for functional (e.g. wear-strength, comfort) and/or decorative purposes.

The segments 16 have essentially horizontal holes or bores 20 (best seen in Fig. 4) adapted so that the rods 18 can pass therethrough. For this purpose, at least some of the segment's bores 20 are alignable with each other. In this 15 manner, the segments 16, which constitute a middle portion of the sole of the footwear, can be incorporated into the sole or removed therefrom whereby the size of the footwear 10 is adjustable.

The heel 14 also has holes or bores 24 being alignable with the rods 18 and thus alignable with at least some of the bores 20 in the segments 16. The 20 heel's bores 24 are adapted to receive the rods 18 (i.e. free ends 22 thereof). The rods 18 extend into the heel 14 where they are fixed in place by a locking mechanism 26.

The locking mechanism 26 comprises, for example, a top portion 28 and a bottom portion 30, at least one or the other of the portions adapted to hold or 25 clamp the rods 18 in place. Typically, the portions 28 and 30 are designed to be engageable with each other, in any known manner. For this purpose, the portions 28 and 30 may have engagement members 28a and 30a, respectively.

In order to adjust the size of the footwear 10, the locking mechanism 26 is disengaged allowing the heel 14 to be slid back away from the toe 12 whereby it 30 is removed from the rods 18. Then, segments 16 are added or removed to

increase or decrease the length of the footwear 10. The heel 14 is then replaced, and then the locking mechanism 16 is reaffixed.

To further accommodate such adjustment, if the footwear 10 is a sandal or "flip-flop" or "thong" type, wherein it typically incorporates a toe-strap 32, the positioning of said toe-strap 32 may be altered. For this purpose, at least some of the segments 16 may further comprise (essentially) vertical bores 34 (Figs. 3A, 3B and 4) adapted to receive attachment projections 36 of the toe-strap 32 which can be attached (fixed in place) by any known means.

As understood from the exploded view of the footwear 10 in Fig. 2, the toe 12 can be composed of layers, for example an outsole layer 121, an insole layer 122 and an intermediate layer 123. Such a design may be convenient for manufacturing and allow for portions/layers of different characteristics. For example, the outsole layer 121 may be made of a wear resistant material for increasing the life of the footwear 10 and the insole layer 122 may be made of a relatively soft or compliant material for comfort of a wearer.

Fig. 4 illustrates an article of footwear 10'' being a modification of that described with reference to the preceding figures. Here, the footwear 10'' comprises at least some segments 16a having at least one transverse bore 38; best seen in Fig. 5A. A segment 16b shown in Fig. 5A illustrates the possibility of the segment having both bores like bores 20 and like bore 38; thereby providing different options for achieving a given footwear length as well as a particular aesthetic aspect (e.g. different colors on each face of the segment) or flexibility thereto.

Additionally, the segments 16b could include bores 20a essentially perpendicular to bores 20 such that the segment could be incorporated in the footwear 10 rotated a quarter turn/rotation to that shown in Fig. 5A. This feature could have advantages in situations, for example, where any of the segments 16b have designs thereon or are shaped in a way that the overall design of the footwear can be changed (by turning/rotating segments), thereby giving the

wearer the option to "self-design" the footwear to his/her taste. Bore 38 also provides flexibility in this regard.

It should be understood that the heel 14 could be designed in a manner analogous to that just described with respect to the toe 12, and vice versa. In other words, referring now to Fig. 3B, there may be footwear 10' of the present invention wherein the rods 18 extend from a heel 14' toward a toe 12' and being locked in place by a locking mechanism 26' at the toe 12', *mutatis mutandis*.

It should also be noted that rather than providing several extension segments 16, there may be provided one or more segments, the length of which may be predetermined or be set to suit an individual's foot size, e.g. by trimming the length of such segments.

Figs. 5B-5I illustrate various examples of segments which may be used in adjustable footwear according to further embodiments of the present invention. The segments shown in these figures do not require a segment holding member (rod, tongue, cable, elastic, etc.) rather instead they comprise inter-engaging or inter-corresponding members, typically male-female type engagement elements.

In Fig. 5B there is shown a segment 116 having a "Lego<sup>TM</sup>-type" configuration. Thus, it has projections 118 (only one is seen) and indentations 120 which are designed to correspond to indentations and projections of other similarly configured segments. Naturally, a toe and heel of footwear used in an embodiment shown in Fig. 5B would also have corresponding projections or indentations, as the case may be, so that the segments 116 could be suitably joined thereto. It should be understood that this latter situation is the same for all of the segments described in Figs. 5B-5I, and therefore this fact shall not be repeated.

In Fig. 5C there is shown a segment 216 being similar to segment 116 of Fig. 5B, however it comprises an elongated projection 218 and a slotted indentation 220 - again, designed to correspond to an indentation and projection of other similarly configured segments.

In Fig. 5D there is shown a segment 316 comprising a wide hook-shaped projection 318 and a rod 320. For illustration purposes, the segment 316 is shown with a partial cutaway in the area of the rod 320 and typically the rod 320 would be attached to the rest of the segment at both its ends to provide strong support. To join such segments 316 with each other, one segment is angled to allow the hook-shaped projection 318 to be slid under the slotted indentation 320 of another segment, and then it is arranged to be flush to that other segment.

Fig. 5E presents a segment 416 being similar to segment 316 of Fig. 5D, however it comprises a pair of resilient projections 418 that can inter-engage with a rod 420. Again, for illustration purposes, the segment 416 is shown with a partial cutaway in the area of rod 420. To join such segments 416 with each other, one segment is pushed toward another segment causing the projections 418 to first open when nubs 422 of the projections 418 contact the rod 420 of another segment, and then to close around the backside of the rod 420 in a snap-fit manner.

Fig. 5F shows another segment 516 connectable to like segments; as above. Here, the segment 516 comprises a screw-like projection 518 that can inter-engage with a threaded indentation 520. To join such segments 516 with each other, one segment is simply turned so that its screw-like projection 518 screws into the threaded indentation 520 of another segment.

Fig. 5G shows yet another example of a segment 616 connectable to like segments. Here, the segment 616 comprises a projection, for example an L-shaped projection 618 that can inter-engage with a corresponding indentation 620. The indentation 620 comprises a slot 622 and the projection comprises an arm 624, the slot having a length dimension d1 typically being a bit longer than a length dimension d2 of the arm 624 of the L-shaped projection 618.

To join such segments 616 with each other, a first segment is turned 90° so that its L-shaped projection 618 fits into the slot 622 of the other segment, then the first segment is pushed flush to the other segment, and lastly it is turned

90° so that the arm 624 enters an arm-receiving cavity 626 of the indentation 620.

Fig. 5H shows yet a further example of a segment 716 connectable to like segments. Here, the segment 716 is a puzzle-like piece and comprises a  
5 projection 718 adapted to fit into an indentation 720 by either sliding transversely or by a pressure/snap fitting method.

Fig. 5I provides an embodiment showing another example wherein segments are inter-connected. Here, segments 816 (only one shown) have hook and loop fasteners (Velcro™) 818 and 820 adhered to their sides whereby they  
10 can attach one to the next.

Fig. 5J illustrates another embodiment wherein segments are inter-connected. However, in this case there are segments 916 that remain connected while being movable in relation to each other in that they can be spaced apart, to various degrees, or be positioned adjacent each other. This option can be  
15 accomplished, for example, as seen in Fig. 5I.

The segments 916 have segment connecting members 918, for example nail-shaped members having a head 920 and a stem 922. The segments 916 comprise cavities 924 (shown with dashed lines) within which the heads 920 and a portion of the stems 922 are located; these also being shown with dashed lines  
20 where they are internal to the segments 916. The cavities 924 are shaped such that the connecting members 918 can be slid back and forth whereby the segments 916 may be positioned closer or farther from each other.

To fix the distance, the cavities 924 are adapted to fairly snugly hold the connecting members 918, or the segments 916 may be held in place by one of  
25 several alternate methods (e.g. such as described below).

Figs. 6 and 7 illustrate another embodiment of the present invention, providing an article of footwear, generally designated as 100. Here, disposed between a toe 12a and a heel 14a is a flexible bellows-like structure 50 which connects the toe and heel and provides size flexibility to the footwear 100.

The toe 12a has a tongue 52, which may be integral therewith or attached thereto, adapted to be slidable through a passage (not seen) in the bellows-like structure 50. The tongue 52 comprises a plurality of through-holes 54 being collinear and typically equally spaced apart. The heel 14a comprises a tongue receptacle 56 having depressions 58 corresponding, and similarly spaced, to holes 54.

The heel 14a comprises a top portion 60 adapted to be upwardly bendable, exposing the tongue receptacle 56. The top portion 60 includes at least one downwardly projecting peg-like member 62, arranged, and of a size, to pass through the tongue's holes 54 and be engagedly receivable in the depressions 58 of the tongue receptacle 56, for example, in a snap-fit type manner.

To adjust the size of the footwear 100, the heel's top portion 60 is lifted (illustrated by dashed lines in Fig. 7), thereby decoupling the peg-like members 62 from the depressions 58 and lifting them out from the holes 54. The toe 12a and the heel 14a are then slid toward or away from each other to respectively decrease or increase the length of the footwear 100. This may entail compressing or expanding the bellows-like structure 50 for which purpose it is made of a flexible, resilient material.

When a desired length is achieved, within the tolerance of the distance between the spaced-apart holes 54, the size of the footwear 10 can be fixed. This is accomplished by aligning the tongue's holes 54 with the tongue receptacle depressions 58 and closing the heel's top portion 60 downward to recouple the peg-like members 62 with the depressions 28.

Optionally, there may be provided a marker 64, such as an arrow or projection, associated with the tongue 52, along with indicia 66 adjacent the tongue receptacle 56, for indicating a shoe size. This marker/indicia arrangement may also be useful for making it easier to align the tongue's holes 54 with tongue receptacle's depressions 58; for example, by means of a projection/socket (male/female component) arrangement for ensuring alignment.



It should be understood that the function provided by the heel's top portion 60 could alternatively be provided by a bottom portion thereof or even by a top or bottom portion of the toe 12a, *mutatis mutandis*.

According to a further embodiment of the present invention, illustrated in  
5 Figs. 8-10, there is an article of footwear 200 comprising elongated projections 70 extending from a heel 14b toward a toe 12b thereof. The profile of the projections 70 (Fig. 9A) corresponds to channels 72 in an elongated projection receiving portion 74 projecting from the toe 12b.

The heel's projections 70 are slidable toward and apart from the receiving  
10 portion 74. It should be noted however that the profile of the projections 70, in combination with the shape of the receiving portions channels 72, are of a geometry whereby the members are prevented from significantly sliding with respect to each other in the vertical direction. This is a much preferred situation for since it would otherwise be potentially inconvenient or uncomfortable to the  
15 wearer. It should be understood that many other profile/shape combinations are possible which would prevent such unwanted vertical displacement.

Fig. 9B illustrates one example of the many alternative interacting configurations for elongated projections and corresponding channels of a projection receiving portion. In this example, the projections are inverted T-  
20 shaped elongated projections 270, which are engagable in correspondingly shaped channels 272 with a projection receiving portion 274. It should be understood that such projections may be any of a variety of profiles in addition to those described above, e.g. L-shaped, bulb-shaped, J-shaped, Y-shaped, anchor-shaped, cross-shaped, and the like.

25 Appropriate design of the exemplary projections 70, 270 and channels 72, 272, respectively, can allow the footwear 200 to be adjusted to a desired length and remain at such while it is worn, for example, via a pressure or friction inter-fitting of the projections and receiving portions. However, the footwear 200 typically will include an auxiliary locking arrangement, such as that now  
30 described.

An example of such a locking arrangement is shown in Fig. 10, wherein extending from the toe 12b toward the heel 14b is a tongue 76 which comprises at least one peg-like member projecting therefrom. The peg-like member is not visible, however it can be of a form similar to that described above with reference to Figs. 6 and 7. The heel 14b comprises a tongue receptacle 78 comprising a plurality of depressions 80 which are adapted to receive the at least one peg-like member.

The size of the shoe can be adjusted by removing the tongue 76 from the tongue receptacle 78, sliding the toe and the heel apart or together -corresponding to the desired footwear size - and then reengaging the tongue 76 and the tongue receptacle 78 (i.e. pressing the peg-like structure into a/the depression(s) ).

Once again, it should be understood that heel/toe (i.e. projections/receiving portion) could be arranged conversely and that the tongue could be disposed at either of the top or bottom of the sole of the footwear and could alternatively extend from the heel 14b, *mutatis mutandis*.

Fig. 11 shows a modification of the embodiment of Fig. 1 where there is footwear 110 wherein extending between a toe 112 and a heel 114 is at least one, typically more than one, segment holding member in the form of a stretchable member or elastic member 117 (two shown) running through segments 119 (therefore shown by dashed lines). The segments 119 can be added or removed upon pulling the toe 112 and heel 114 apart and the segment(s) is then fitted on the elastic member 117 or removed therefrom, respectively.

Figs. 12A - 12C provide some examples of segments which are suitable for use in the embodiment of Fig. 11. As such, Fig. 12A shows a segment 121 with one or more slits 123 adapted to allow the elastic member 117 to slide therealong the slits having a cavity 125 for holding the elastic member when the footwear 110 is assembled.

Fig. 12B shows a segment 131 having a transverse slit 133, the segment adapted to spread open whereby the elastic member 117 can be inserted or removed for adding or removing a segment, respectively.

Fig. 12C shows a segment 141 comprising two portions 143 and 145 held adjacent to each other by a hinge 147 at one end thereof and having a latch arrangement 149 at the other end thereof. To allow adding the segment 141 to the footwear 110, the segment can be opened by unlatching the latch arrangement 5 149 and pivoting the portions 143, 145 at the hinge 147 and fitting the segment around the elastic member 117. The reverse procedure is used to remove the segment 141 from the footwear 110.

It should be understood that segments such as segments 121, 131 and 141, and the like, can also be used in connection with the embodiment of Fig.1.

10 It will be appreciated by persons skilled in the art that the present invention is not limited by what has been particularly shown by the exemplary embodiments described hereinabove. Thus, it should be understood that numerous additional embodiments are within the scope of the invention, *mutatis mutandis*.

15 For example, regarding the embodiment described with reference to Figs. 1-5, the segments 16 and 16b need not be juxtaposed in an aligned manner and, for example, may be arranged in a fashion where they are staggered, angled, etc. thereby providing the wearer with different fashion options or individual expression. In this regard, it should be understood that the segments 16, 16a and 20 16b could be of a variety of shapes and colors and may comprise various ornamental features. Further, the bores 20 could be angled with respect to the heel/toe to facilitate assembly options for the footwear 10. Additionally, the segments 16, 16a and 16b could comprise a texture, for example, to provide a massaging effect to the wearer, for aesthetic purposes, for a combination of these, 25 or for other purposes.

Further, the invention has been illustrated in relation to sandal type (i.e. so-called flip-flops or thongs), however, the invention also can embody footwear such as more conventional shoes and the like by incorporating known means for allowing the expansion/contraction of a footwear's upper portion (e.g. that 30 described in the above-mentioned prior art).

In addition, it should be understood that features of the above embodiments may be combined or substituted for other features. For example, in connection to the embodiments described with reference to Figs. 1-5, the segments 16, 16a and 16b may be held on a segment holding member being a  
5 tongue-like member, in place of the rods 18; and, those embodiments may incorporate locking mechanisms such as described with reference to Figs. 6 and 10.

**CLAIMS:**

1. Personally adjustable footwear having a toe portion, a heel portion and a mechanism for adjustment of the length of said footwear comprising one of the following:
  - 5 (a) one or more segments positioned between said toe portion and said heel portion, said segments being adapted so they can be easily positioned intermediate the toe and heel portions and easily removed therefrom or so they can be spaced apart from each other or moved closer to each other to thereby affect a desired footwear length; or
  - 10 (b) (i) an expandable and contractable bellows-like structure intermediate said toe portion and said heel portion, (ii) a tongue extending from the toe portion toward and into the heel portion, or, extending from the heel portion toward and into the toe portion, and passing through said bellows-like structure and having engaging members and (iii) a tongue
  - 15 receptacle disposed in either the toe portion or the heel portion, being the portion not having the tongue extending therefrom, said tongue receptacle adapted to allow engaging and disengaging with said engaging members of said tongue, whereby when said tongue and tongue receptacle are disengaged, said toe portion and said heel portion
  - 20 can be pushed toward each other or pulled away from one another whereupon the tongue and tongue receptacle can be engaged to fix the footwear at a desired length; or
  - (c) one or more projections extending from the toe portion toward and generally slidingly mating with channels in an elongated projection
  - 25 extending from the heel portion, or vice versa, whereby the footwear can be adjusted to a desired length.
2. Footwear according to claim 1, of the type (a), further comprising one or more segment holding members aligned essentially longitudinally to the length of said footwear and extending from said toe portion toward and into said heel

portion, or, extending from said heel portion toward and into said toe portion, or, extending from one segment to another.

3. Footwear according to claim 2, wherein the one or more segment holding members is/are constituted by one or more rod-like members.
- 5 4. Footwear according to claim 3, wherein there are at least two rod-like members.
5. Footwear according to claim 2, wherein the one or more segment holding members is/are constituted by a tongue-like member.
6. Footwear according to claim 2, wherein the one or more segment holding  
10 members is/are constituted by a stretchable member.
7. Footwear according to claim 2, wherein the one or more segment holding members is/are constituted by an inter-engaging arrangement between said segments.
8. Footwear according to claim 7, wherein inter-engaging arrangement is a  
15 hooking arrangement.
9. Footwear according to claim 7, wherein inter-engaging arrangement is constituted by hook and loop fasteners.
10. Footwear according to claim 7, wherein the segments inter-engage via a male-female inter-engaging arrangement.
- 20 11. Footwear according to claim 10, wherein the male-female inter-engaging arrangement is one of a screwing and/or a snap-fit arrangement.
12. Footwear according to claim 10, wherein the male-female inter-engaging arrangement is constituted by an L-shaped projection and an L-shaped indentation.
- 25 13. Footwear according to claim 10, wherein the male-female inter-engaging arrangement is constituted by a puzzle-type inter-engagement.
14. Footwear according to claim 10, wherein the male-female inter-engaging arrangement is constituted by a nail-shaped members connecting between the segments and being disposed in cavities therein adapted to allow the segments to

be slid back and forth whereby the segments may be positioned closer or farther from each other.

15. Footwear according to claim 3, wherein the segments are positionable on, and removable from, the one or more rod-like members, and for this purpose  
5 the segments have at least one through-bore adapted to allow the one or more rod-like members to pass therethrough.

16. Footwear according to claim 15, further comprising a locking mechanism disposed in either of the heel portion or the toe portion, not being the portion from which the one or more rod-like members extend; and the toe portion or the  
10 heel portion, not being the portion from which the rod-like members extend, comprises bores alignable with said one or more rod-like members and said locking mechanism is designed to fix the one or more rod-like members at a desired location, with a suitable number of segments positioned thereon, whereby a desired length of the footwear is achieved.

15 17. Footwear according to claim 2, wherein the segments have a length longer than their width and the footwear comprises at least one segment having at least one through-bore being aligned with said width.

18. Footwear according to claim 2, wherein the segments have a length longer than their width and the footwear comprises at least one segment having a  
20 through-bore being aligned with said width and also having a through-bore being aligned with said length.

19. Personally adjustable footwear having a toe portion, a heel portion and a mechanism for adjustment of the length of said footwear comprising one or more segments positioned between said toe portion and said heel portion, said  
25 segments being adapted so they can be easily positioned intermediate the toe and heel portions and easily removed therefrom or so they can be spaced apart from each other or moved closer to each other to thereby affect a desired footwear length.

20. Footwear according to claim 19, wherein the segments comprise an indication of at least one of their dimensions and being the dimension oriented along the length of the footwear when the segment is incorporated therein.
21. Footwear according to claim 19, wherein the segments comprise at least  
5 one bore oriented essentially perpendicular to one or more other bores, whereby the segment is slidable on the one or more rod-like members in a position rotated a quarter turn with respect to the position of said one or more other bores.
22. Footwear according to claim 19, of the type (a), wherein at least one of the segments is adapted so that it may be trimmed to a smaller dimension.
- 10 23. Footwear according to claim 19, of the type (a), wherein the segments are non-uniform.
24. Footwear according to claim 23, wherein the non-uniformity involves variations being of at least one of the following: shape, color, size, angle of bore(s) within, texture and material.
- 15 25. Footwear according to claim 1, of either of the type (b) or (c), wherein there is a mechanism for fixing the length of the footwear and said mechanism has associated therewith indicia for indicating a shoe size.
26. Footwear according to claim 25, wherein at least one of either one of the toe portion or the heel portion comprise(s) adapted to expose a mechanism for  
20 fixing the length of the footwear.
27. Footwear according to claim 26, further comprising a tongue extending from the toe portion toward the heel portion, or vice versa; and a tongue receptacle disposed in either the toe portion or the heel portion, being the portion not having the tongue extending therefrom, said tongue receptacle adapted to  
25 allow engaging and disengaging with said engaging members of said tongue, whereby when said tongue and tongue receptacle are disengaged said toe portion and said heel portion can be slid toward each other or away from each other, whereupon said tongue and tongue receptacle can be engaged to fix the footwear at a desired length.



28. Footwear according to claim 25, wherein the mechanism for fixing the length of the footwear comprises an arrangement for facilitating alignment of the tongue's holes and depressions in the tongue receptacle.

29. Footwear according to claim 28, wherein said arrangement for  
5 facilitating alignment of the tongue's holes and depressions in the tongue receptacle includes mutually corresponding projections at the tongue and at a corresponding tongue receptacle.

30. Footwear according to claim 1, of either of the type (b) or (c), wherein the tongue comprises projections corresponding to depressions in the tongue  
10 receptacle.

31. Footwear according to claim 1, of type (b) or (c), wherein the one or more projections have a profile being any of triangular, T-shaped, L-shaped, J-shaped, Y-shaped, anchor-shaped and cross-shaped.

32. Footwear according to claim 1, wherein the footwear includes at least  
15 one toe strap or foot strap for holding a wearer's foot to the footwear.

33. Footwear according to claim 32, further comprising an arrangement for allowing the strap(s) to attach to the sole of the footwear in different locations.

34. Personally adjustable footwear having a toe portion, a heel portion and a mechanism for allowing adjustment of the length of said footwear comprising  
20 one or more rod-like members aligned essentially longitudinally to the length of said footwear and extending from said toe portion toward and into said heel portion, or, extending from said heel portion toward and into said toe portion, (ii) segments slidably disposed on said rod-like member(s), and intermediate the toe and heel portions, and for this purpose having at least one through-bore adapted  
25 to allow the rod-like member(s) to pass therethrough, and (iii) a locking mechanism disposed in either of the heel portion or the toe portion, not being the portion from which the rod-like member(s) extend; and the toe portion or the heel portion, not being the portion from which the rod-like member(s) extend, comprises bores alignable with said rod-like member(s) and said locking  
30 mechanism is designed to fix the rod-like member(s) at a predetermined location,

with a suitable number of segments positioned on said rod-like member(s), corresponding to a desired length of the footwear.

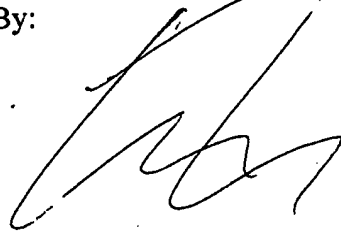
35. Personally adjustable footwear having a toe portion, a heel portion and a mechanism for allowing adjustment of the length of said footwear comprising an expandable and contractable bellows-like structure intermediate said toe portion and said heel portion, (ii) a tongue extending from the toe portion toward and into the heel portion, or, extending from the heel portion toward and into the toe portion, and passing through said bellows-like structure and having engaging members, and (iii) a tongue receptacle disposed in either the toe portion or the heel portion, being the portion not having the tongue extending therefrom, said tongue receptacle adapted to allow engaging and disengaging with said engaging members of said tongue, whereby when said tongue and tongue receptacle are disengaged said toe portion and said heel portion can be pushed toward each other or pulled away from one another whereupon the tongue and tongue receptacle can be engaged to fix the footwear at a desired length.

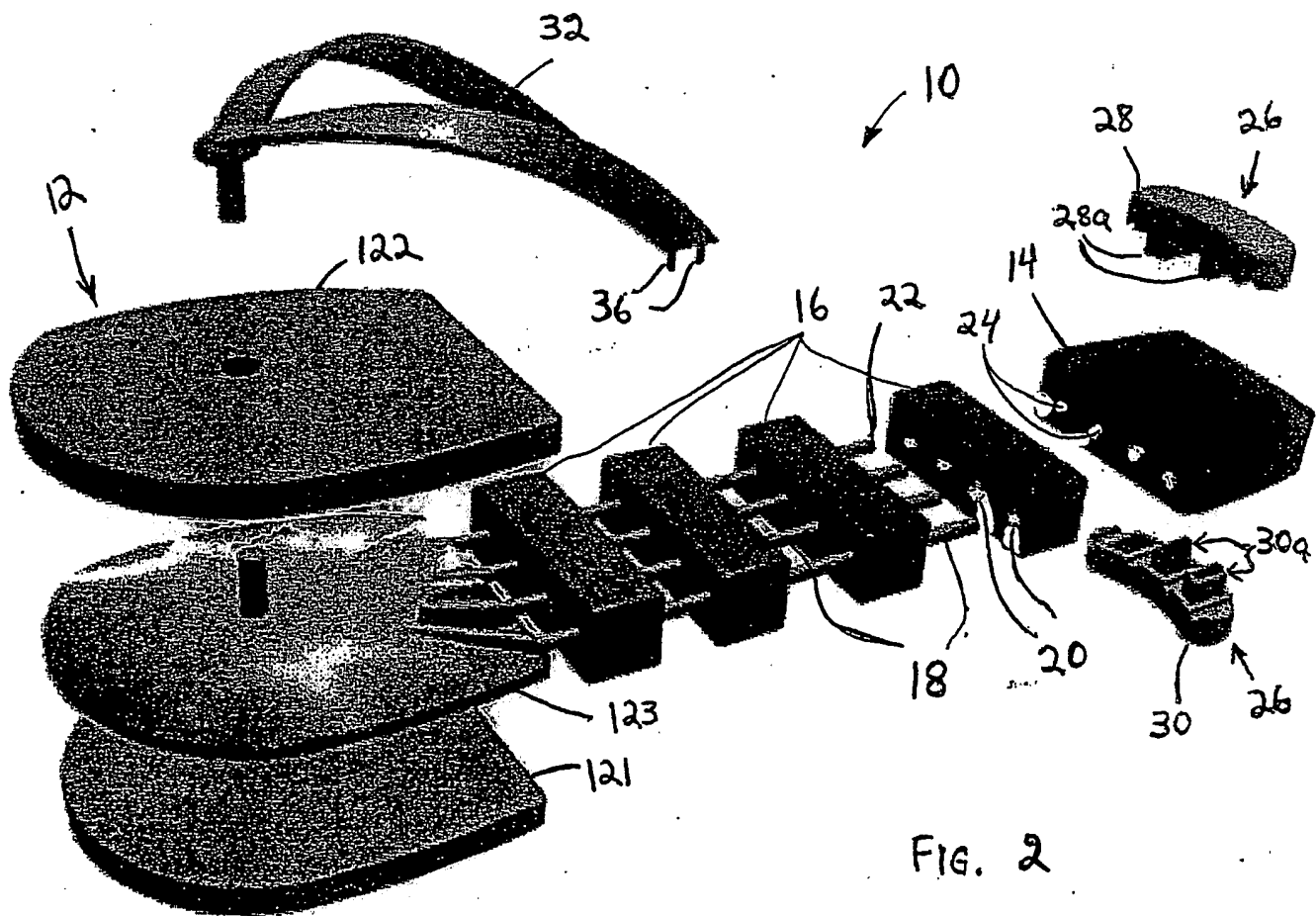
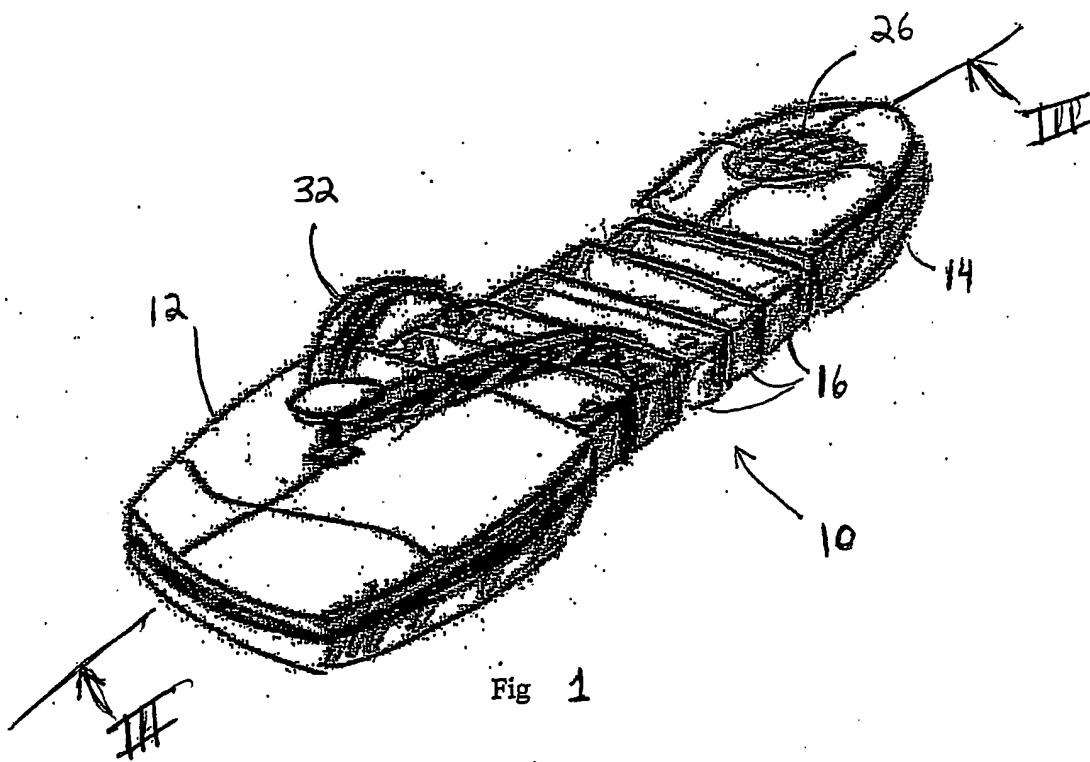
36. Personally adjustable footwear having a toe portion, a heel portion and a mechanism for allowing adjustment of the length of said footwear comprising one or more projections extending from the toe portion toward and generally slidably mating with channels in an elongated projection extending from the heel portion, or vice versa, (ii) a tongue extending from the toe portion toward the heel portion, being the portion not having the tongue extending therefrom or vice versa, and being essentially flush to the portion not having the tongue extending therefrom, (iii) a tongue receptacle disposed in either the toe portion or the heel portion being the portion not having the tongue extending therefrom, said tongue receptacle adapted to allow engaging and disengaging with said engaging members of said tongue, whereby when said tongue and tongue receptacle are disengaged said toe portion and said heel portion can be slid toward each other or away from each other whereupon said tongue and tongue receptacle can be engaged to fix the footwear at a desired length.

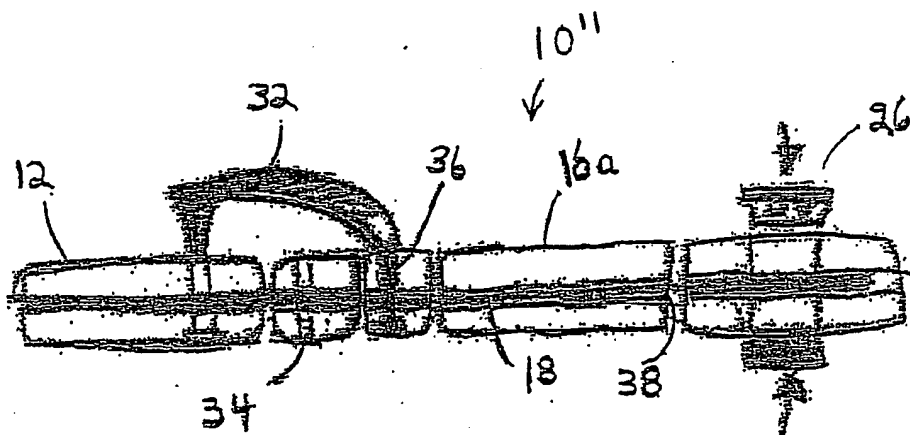
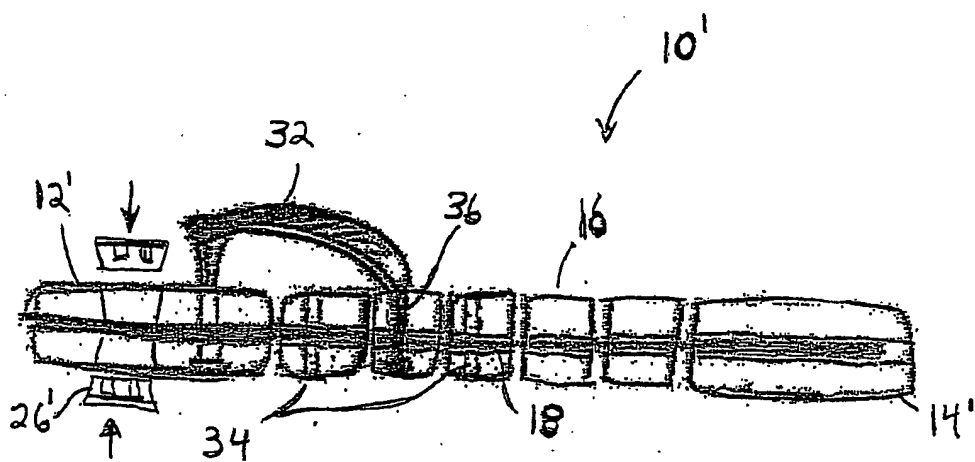
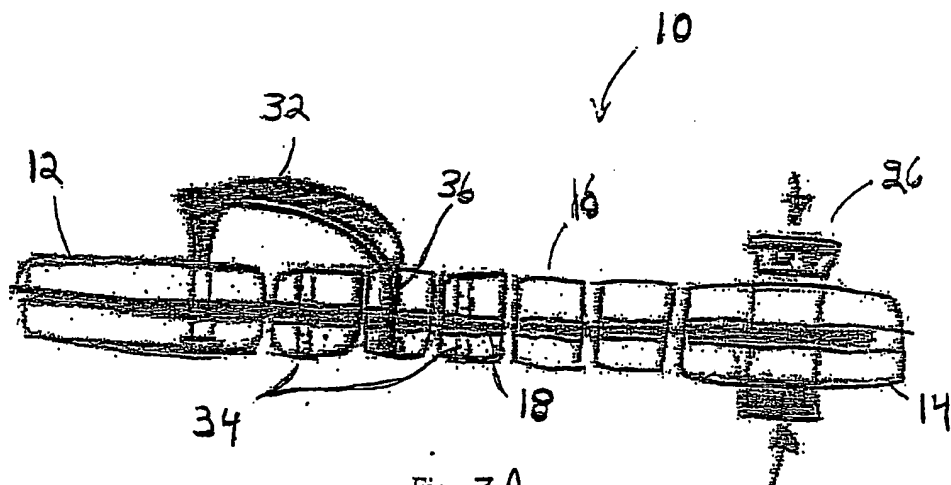
37. Footwear as substantially described herein with reference to the drawings.

5

For the Applicants  
**REINHOLD COHN AND PARTNERS**  
By:

A handwritten signature in black ink, appearing to be 'R. Cohn', written over the 'By:' line.





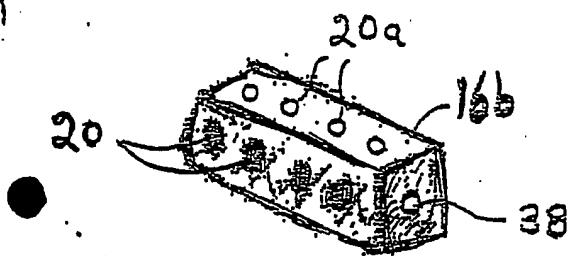


Fig 5A

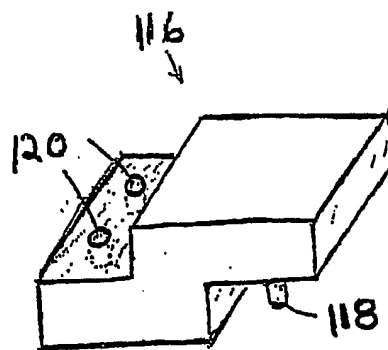


Fig. 5B

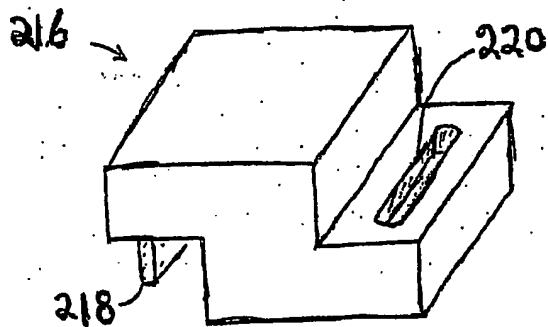


Fig 5C

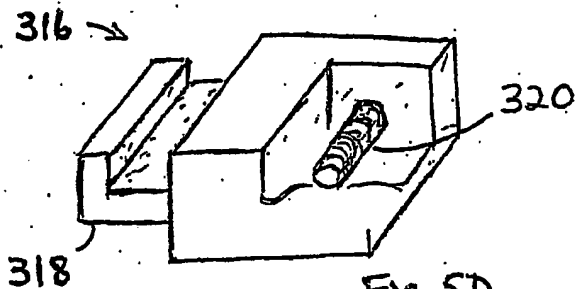


Fig 5D

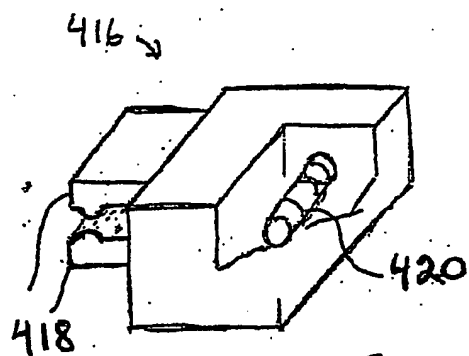


Fig 5E

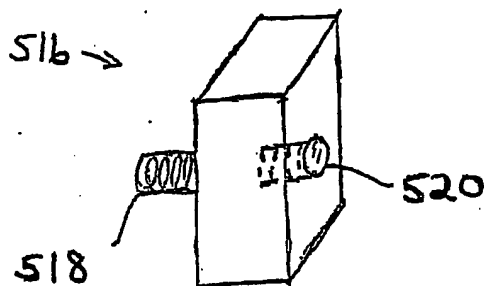


Fig 5F

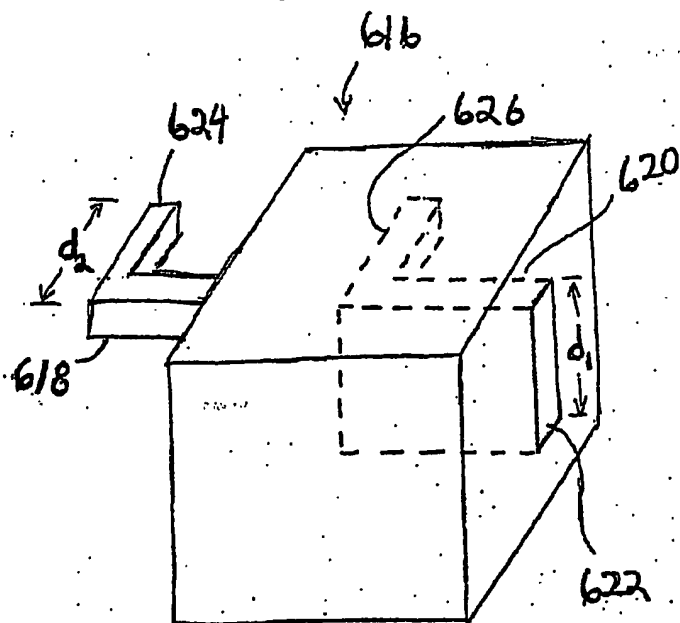


Fig 5G

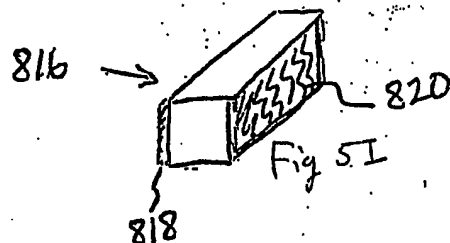
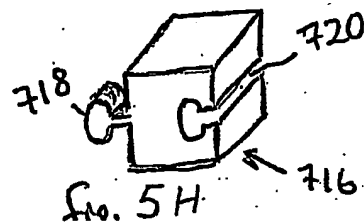


Fig 5I

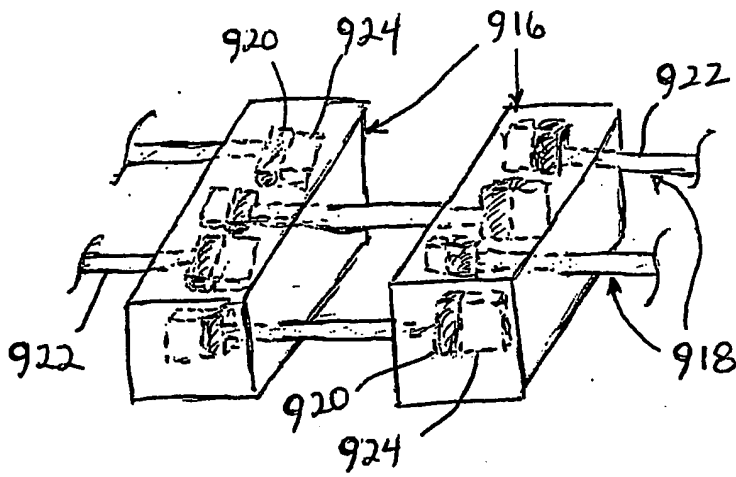


Fig. 5J

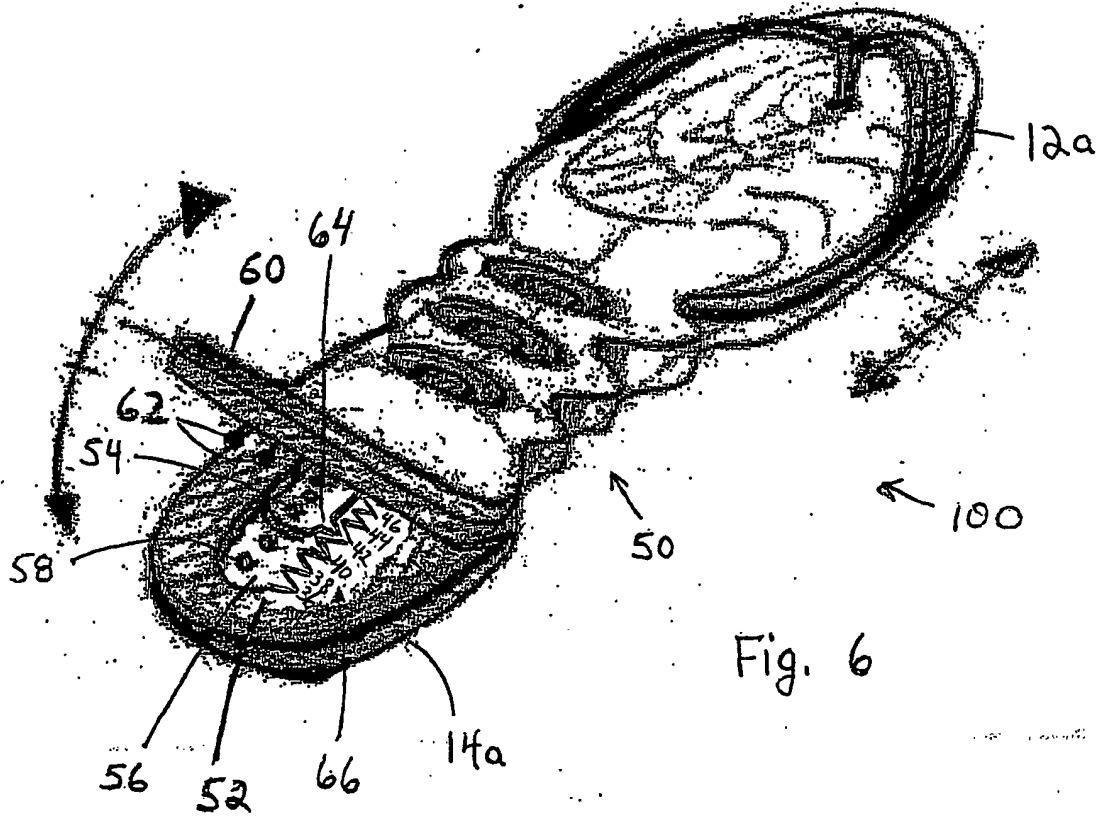


Fig. 6

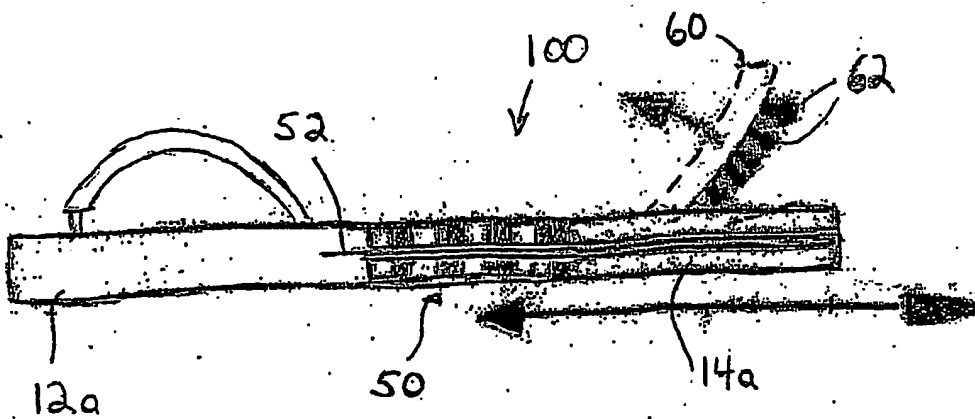


Fig. 7.

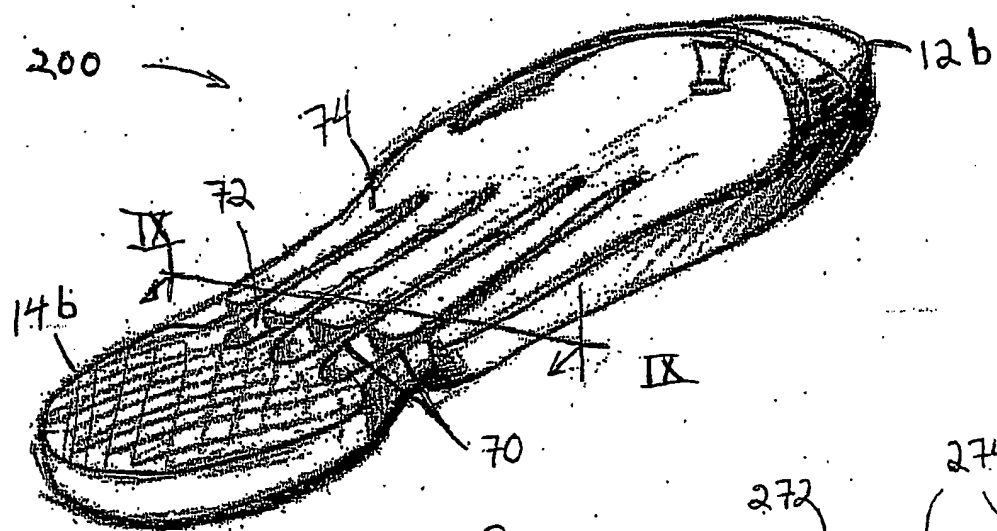


Fig 8

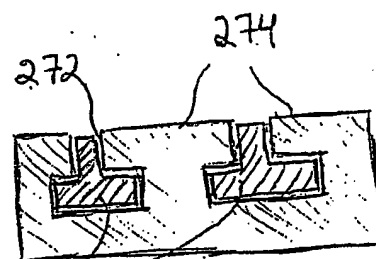


Fig. 9B

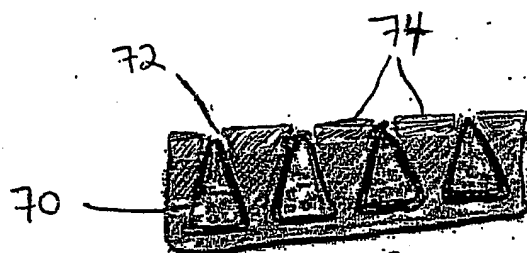


Fig 9A

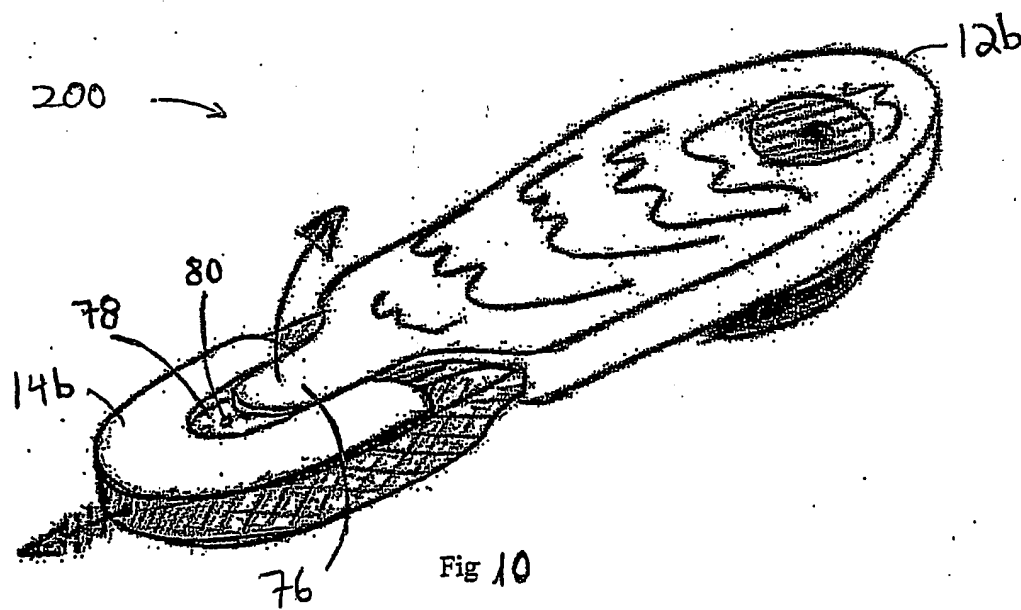


Fig 10



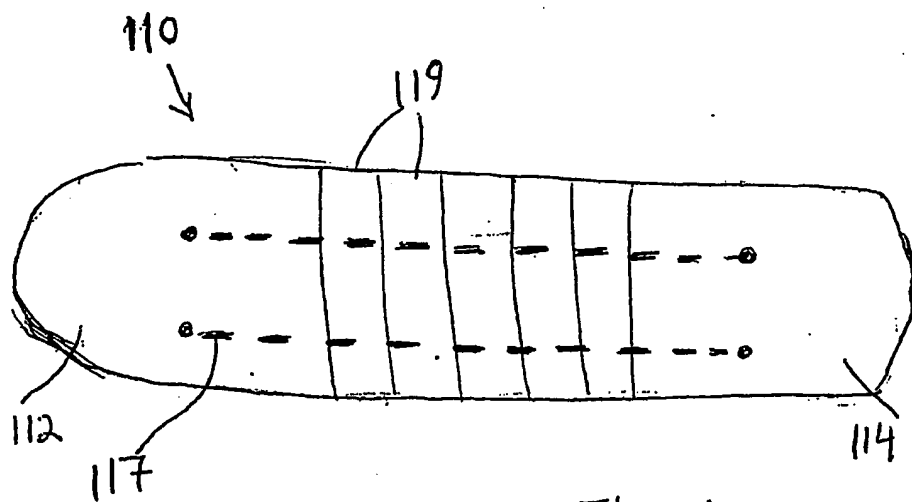
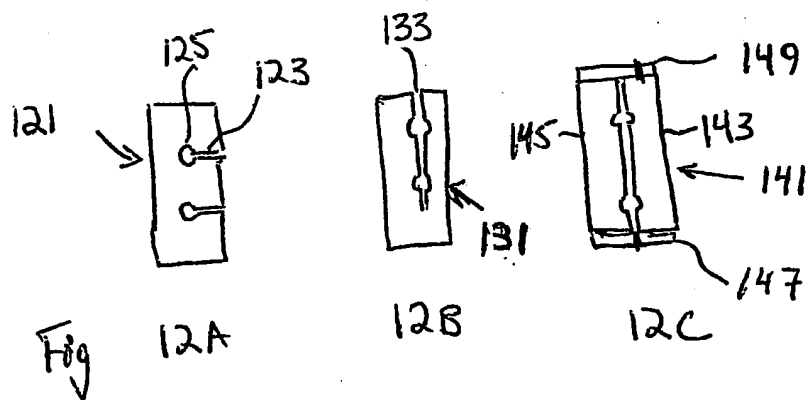


Fig. 11



Fig

12A

12B

12C